

Claims:

1. An air transporter-conditioner, comprising:

a housing having a first inlet and a second inlet and a first outlet and a second outlet;

5 a first ion generator, including a first electrode, and a second electrode, that creates an airflow in a downstream direction from said inlets to said first outlet and;

a second ion generator, including a first electrode, and a second electrode, that creates an airflow in a downstream direction from said inlets to said second outlet.

10 2. The air transporter-conditioner as recited in Claim 1, wherein the first electrode in said first ion generator and in said second ion generator includes at least one electrode with a characteristic selected from a group consisting of (i) a pin-shaped electrode that terminates in a pointed tip, (ii) a pin-shaped electrode that terminates in a plurality of individual fibers, (iii) a wire-shaped electrode, (iv) a curved wire-shaped electrode, (v) a coil-shaped electrode, and (vi) a flat coil-shaped wire.

15 3. The air transporter-conditioner as recited in Claim 1, wherein the second electrode in said first ion generator and in said second ion generator includes at least one electrode with a characteristic selected from a group consisting of (i) an electrode with a U-shaped cross-section, 20 (ii) an electrode with an L-shaped cross-section, (iii) an electrode with a rod-shaped cross-section,

(iv) a ring-shaped electrode, and (v) an electrode having a non-linear tail section.

4. The air transporter-conditioner as recited in claim 1, wherein said inlets are located on opposing surfaces of said housing.

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5. The air transporter-conditioner as recited in claim 1, wherein said outlets are located on opposing surfaces of said housing.

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6. The air transporter-conditioner in claim 1, including a focus electrode located upstream from the first electrode of the first and second ion generators.

7. The air transporter-conditioner of claim 1, wherein said outlets are covered with fins which are elongated between a top and a bottom of said housing.

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8. The air transporter-conditioner as recited in claim 1, wherein said second electrode in said first ion generator is located proximate to said first outlet; and
wherein said second electrode in said second ion generator is located proximate to said second outlet.

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9. The air transporter-conditioner as recited in claim 1, wherein said housing further has a top

surface, and control devices located on said top surface.

10. The air transporter-conditioner as recited in claim 1, wherein said housing has a top surface and said second electrodes within said first and second ion generators are removable through said
5 top surface of said housing.

11. The air transporter-conditioner as recited in claim 1, wherein at least one of said first and second ion generators further includes a trailing electrode located downstream of said second electrode.
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12. The air transporter-conditioner as recited in claim 11, wherein said trailing electrode and at least one of said second electrodes of said first and second ion generators are electrically connected.

13. The air transporter-conditioner as recited in claim 6, wherein said focus electrode is electrically connected to at least one of said first electrodes within said first and second ion generator.
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14. The air transporter-conditioner of claim 1 wherein said housing has a top, a bottom and
20 one or more sides, said housing has said first inlet located in said top and said second inlet located

in said bottom, and said housing has said outlets located in any of said one or more said sides.

15. The air transporter-conditioner of claim 1 wherein said inlets and said outlets are covered with fins and said fins are about parallel to each other.

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16. The air transporter-conditioner of claim 1 wherein said outlets are covered with fins and said second electrodes of said first and second ion generators includes fins and said fins that cover the outlets are about parallel the fins of the second electrodes.

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17. The air transporter-conditioner of claim 16 wherein said second electrode of said first ion generator is located adjacent to said first outlet, and said second electrode of said second ion generator is located adjacent to said second outlet.

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18. The air transporter-conditioner of claim 1 wherein a downstream direction is defined from said first ion generator to said first outlet, and including a germicidal device located upstream of said first ion generators.

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19. The air transporter-conditioner of claim 1 wherein a downstream direction is defined from said first ion generator to said first outlet, and a downstream direction is also defined from said second ion generator to said second outlet, and including a germicidal device located upstream of

said first and second ion generators.

20. The air transporter-conditioner of claim 1 wherein at least one of the second electrodes of the first and the second ion generator is Z-shaped.

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21. The air transporter-conditioner of claim 1 wherein at least one of the second electrodes of the first and the second ion generator has a tail section that is wider than a nose section.

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22. The air transporter-conditioner of claim 1 wherein at least one of the second electrodes of the first and the second ion generator has a planar front section and a tail section that is angled relative to said planar front section.

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An air transporter-conditioner, comprising:

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a housing, including a first inlet and a second inlet, and a first outlet and a second outlet;

a first electrode assembly, including a first array of electrodes and a second array of electrodes that creates an airflow in a downstream direction from said inlet to said first outlet; and

a second electrode assembly, including a first array of electrodes and a second array of electrodes that create an airflow in a downstream direction from said inlets to said second outlet.

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24. The air transporter-conditioner as recited in Claim 23, wherein the first array of electrodes in said first electrode assembly and in said second electrode assembly includes at least one electrode with a characteristic selected from a group consisting of (i) a pin-shaped electrode that terminates in a pointed tip, (ii) a pin-shaped electrode that terminates in a plurality of individual
5 fibers, (iii) a wire-shaped electrode, (iv) a curved wire-shaped electrode, (v) a coil-shaped electrode, and (vi) a flat coil-shaped wire.

25. The air transporter-conditioner as recited in Claim 23, wherein the second array of electrodes in said first electrode assembly and in said second electrode assembly includes at least
10 one electrode with a characteristic selected from a group consisting of (i) an electrode with a U-shaped cross-section, (ii) an electrode with an L-shaped cross-section, (iii) an electrode with a rod-shaped cross-section, (iv) a ring-shaped electrode, and (v) an electrode having a non-linear tail section.

15 26. The air transporter-conditioner of claim 23 wherein said first and second inlets are located on opposing surfaces of said housing.

27. The air transporter-conditioner of claim 23 wherein said first and said outlets are located on opposing surfaces of said housing.

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28. The air transporter-conditioner of claim 23 wherein a focus electrode located upstream from the first electrodes of said first and second electrode assemblies.

29. The air transporter-conditioner of claim 23 wherein said second array of electrodes in said first electrode assembly is located adjacent to the first outlet, and the second array of electrodes in said second electrode assembly is located adjacent to the second outlet.

30. The air transporter-conditioner of claim 23 wherein housing further has a top surface, and a control device located on said top surface.

31. The air transporter-conditioner of claim 23 wherein said housing has a top surface and said second array of electrodes from said first and second electrode assemblies is removable from said housing through said top surface.

32. The air transporter-conditioner of claim 23 wherein at least one of said first and second electrode assemblies further includes a trailing electrode located downstream of said second array of electrodes.

33. The air transporter-conditioner of claim 32 wherein said trailing electrode and said second electrodes are electrically connected.

34. The air transporter-conditioner of claim 28 wherein said focus electrode is electrically connected to at least one of said first electrode arrays within said first and second electrode assemblies.

5 35. The air transporter-conditioner of claim 23 wherein said housing has a top, a bottom and one or more sides, said housing having said first inlet located in said top and said second inlet located in said bottom, and said housing having said first and second outlets located in any of said one or more sides.

10 36. The air transporter-conditioner of claim 23 wherein said inlets and said outlets are covered with fins and said fins are about parallel to each other.

37. The air transporter-conditioner of claim 23 wherein said outlets are covered with fins and said second electrodes of said first and second electrode assemblies includes fins and said fins that
15 cover the outlets are about parallel the fins of the second electrodes.

38. The air transporter-conditioner of claim 23 wherein said outlets are covered with fins which are elongated between a top and a bottom of said housing.

20 39. The air transporter-conditioner of claim 23 wherein said second array of electrodes of said

first electrode assembly are located adjacent to said first outlet and said second array of electrodes of said second electrode assembly are located adjacent to said second outlet.

40. The air transporter-conditioner of claim 23 wherein a downstream direction is defined from
5 said first electrode assembly to said first outlet, and including a germicidal device located upstream of said first electrode assembly.

41. The air transporter-conditioner of claim 23 wherein a downstream direction is defined from
10 said first electrode assembly to said first outlet, and a downstream direction is also defined from said second electrode assembly to said second outlet, and including a germicidal device located upstream of said first and second electrode assemblies.

42. The air transporter-conditioner of claim 23 wherein at least one of the second electrodes
15 of the first and the second ion generator is Z-shaped.

43. The air transporter-conditioner of claim 23 wherein at least one of the second electrodes
of the first and the second electrode assemblies has a tail section that is wider than a nose section.

44. The air transporter-conditioner of claim 23 wherein at least one of the second electrodes
20 of the first and the second electrode assemblies has a planar front section and a tail section that is

angled relative to said planar front section.

45. An air transporter-conditioner comprising:

5 a housing with a top, a bottom and at least one side located between the top and the bottom;

said housing having a first inlet located in said top and a second inlet located in said bottom;

said housing having an outlet located in said side; and

an ion generator located in said housing that when energized can create a flow of air from said inlets to said outlet.

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46. The air transporter-conditioner of claim 45 wherein the first inlet covers all of the top except for a top peripheral margin and said second inlet covers use of the bottom except for a bottom peripheral margin.

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47. The air transporter-conditioner of claim 45 wherein said outlet includes first and second outlets that are spaced apart and wherein said ion generator creates a flow of air from said first and second inlets to said first outlet, and from said first and second inlets to said second outlet.

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48. The air transporter-conditioner of claim 45 wherein said outlet includes first and second outlets, and said side of said housing has substantially opposed surfaces with one of the outlets

located on each of the opposed surfaces and wherein said ion generator creates a flow of air from said first and second inlets to said first outlet, and from said first and second inlets to said second outlet.

5 49. The air transporter-conditioner of claim 45 wherein said inlets and said outlet are covered with fins and said fins are about parallel to each other.

10 50. The air transporter-conditioner of claim 45 wherein said outlet is covered with fins and said ion generator includes collector electrodes located adjacent to the outlet and said fins that cover the outlet are about parallel to the second electrodes.

15 51. The air transporter-conditioner of claim 45 wherein a downstream direction is defined from said ion generator to said first outlet and to said second outlet and including a germicidal device located upstream of said ion generator.

20 52. The air transporter-conditioner of claim 45 wherein said ion generator includes a collector electrode and said collector electrode is Z-shaped.

20 53. The air transporter-conditioner of claim 45 wherein said ion generator includes a collector electrode that has a tail section that is wider than a nose section.

54. The air transporter-conditioner of claim 45 wherein said ion generator includes a collector electrode and said collector electrode has a leading planar section and a trailing section that is at an angle to said leading planar section.

- 5 (55) An air transporter-conditioner comprising:
- a housing with a top, a bottom and at least one side located between the top and the bottom;
- said housing having a first inlet located in said top and a second inlet located in said bottom;
- said side including first and second opposed surfaces and said housing further including
- 10 a first outlet located in said first opposed surface and a second outlet located in said second opposed surface; and
- an ion generator located in said housing that, when energized, can create a flow of air from said inlets to said outlets.

- 15 56. The air transporter-conditioner of claim 55 wherein said first and second inlets are opposed and said first and second outlets are opposed.

57. The air transporter-conditioner of claim 55 including a germicidal device located in said housing.

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58. The air transporter-conditioner of claim 55 wherein said germicidal device can be removed through said side.

59. The air transporter-conditioner of claim 55 wherein said ion generator includes a collector
5 electrode that can be removed through said top.

60. The air transporter-conditioner of claim 55 including a control that is located on said top.

61. The air transporter-conditioner of claim 55 wherein said first inlet covers substantially all
10 of the top of said housing but for a peripheral margin.

62. The air transporter-conditioner of claim 55 wherein said second inlet covers substantially
all of said bottom of said housing but for a peripheral margin.

63. The air transporter-conditioner of claim 55 wherein said first and second outlets are
15 covered with fins and said ion generator includes collector electrodes located adjacent to the first
and the second outlets and said fins that cover the outlets are about parallel to the second
electrodes.

20 64. The air transporter-conditioner of claim 63 wherein said first and second inlets are covered

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with fins that are parallel to the fins of the first and second outlets.

65. An air transporter-conditioner, comprising:

a housing having at least two inlets and at least two outlets;

5 a first electrode assembly including a first array of electrodes and a second array of electrodes, said first array having a rod-shaped electrode, said second array having two "U"-shaped electrodes located adjacent to one of said outlet;

10 a second electrode assembly including a first array of electrodes and a second array of electrodes, said first array having a rod-shaped electrode, said second array having two "U"-shaped electrodes and located adjacent to the other of said outlets; and

a high voltage generator coupled between said first array of electrodes and said second array of electrodes of each of said first and second electrode assembly.

66. The air transporter-conditioner of claim 65 including:

15 a third focus located between said first electrode assembly and said second electrode assembly.

67. An air transporter-conditioner, comprising:

20 a housing having at least two inlets opposed to each other and at least two outlets opposed to each other;

a first ion generator that creates an airflow from a first array of electrodes to a second array of electrodes;

a second ion generator that creates an airflow from a first array of electrodes to a second array of electrodes;

5 a focus electrode located between said first ion generator and said second ion generator; and

a germicidal lamp exposing the airflow to germicidal radiation, disposed within the housing so that the lamp is not visible to an individual looking into an inlet or an outlet; and

10 a shell for directing the germicidal light away from said inlets, said outlets, and said first and second ion generator.

68. The air transporter-conditioner of claim 67, comprising:

a first focus electrode located between said first ion generator and said second ion generator; and

15 a second focus electrode located between said second ion generator and said germicidal lamp.

69. An air transporter-conditioner, comprising:

a housing having at least two inlets and at least two outlets;

20 a first electrode assembly, disposed in said housing including a first electrode and

a second of electrode;

a second electrode assembly, disposed in said housing including a first electrode and

a second electrode; and

a third focus electrode, located between said first and second electrode assembly.

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(70) An air transporter-conditioner, comprising:

a housing having at least two inlets and at least two outlets;

a first ion generator that creates an airflow from a first array of electrodes to a second array of electrodes;

10 a second ion generator that creates an airflow from a first array of electrodes to a second array of electrodes;

a focus electrode located between said first ion generator and said second ion generator;

15 a first germicidal lamp exposing the airflow to germicidal radiation, located between said focus electrode and said first ion generator; and

a second germicidal lamp exposing the airflow to germicidal radiation, located between said focus electrode and said second ion generator.

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